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Water Innovation
& Research
Centre



UNIVERSITY OF
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Contents

[Upcoming events](#)

[WIRC Water Colloquium Series](#)

[News](#)

[Professor Roy Maconachie and Simon Wharf, has won the Grand Jury Prize at the international 'Let's talk about water' film awards](#)

[Invitation to virtual coffee and catch up](#)

[A Major EPSRC Grant will be led by Dr. Jun Zang to Contribute to Offshore Wind Energy](#)

[Water Innovation Europe 2021 - EU Water-smart society for global leadership](#)

[GW4 Water Security Alliance and WIRC presenting at Climate Exp0](#)

[Recent publications](#)

[Upcoming conference](#)

[IWA Water in Industry 2021 - Conference - China, Nanjing, 23rd August- 25th August 2021](#)

[AQUA~360 - Water for All: Emerging Issue and Innovations, United Kingdom Exeter, 31st August - 02nd September 2021](#)

[17th International Conference on Environmental Science and technology](#)

[\(Supported, Greece, Athens 1st September - 4th September 2021\)](#)

Upcoming events

[WIRC Water Colloquium Series](#)

Thank you to all those who attended our recent water colloquium featuring **Dr Mirella di Lorenzo**, Reader in

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website [here](#).

Our next colloquium is on **16th July @ 2.30pm**, where we will welcome **Professor Jan Hofman** of Water Science and Engineering and director of the **Water Innovation and Research Centre (WIRC@Bath)** at the **University of Bath**. It will be a joint event with GW4 WSA, so we will be hosting this webinar via Zoom rather than our usual Teams. Please [register for the event here](#) -- you can find more information on [the GW4 WSA website](#).



You can keep up to date with the WIRC water colloquia series, and the other events hosted by WIRC, by continuing to subscribe to this mailing list, as well as by following our [Twitter](#) and [LinkedIn](#) pages.

Please note that these events are free and open to all.

News

[Professor Roy Maconachie and Simon Wharf, has won the Grand Jury Prize at the international 'Let's talk about water' film awards](#)



A University of Bath film shot on location in Sierra Leone by development scholar Professor Roy Maconachie and in-house videographer Simon Wharf has won top prize in the international ['Let's Talk About Water'](#) film competition.

The short film, titled ['Green Island'](#), which is currently being edited into a longer piece to support Roy's wider research on urban food production and resource use in West Africa, tells the story of a female farmer in the country's capital Freetown. It reflects on the impact that increased migration has had on access to the water she and other farmers depend on.

[Invitation for a coffee and a catch up](#)

WIRC organises regular meetings for small talk, so we have booked a few afternoon catch up dates on **14th July, at 16:15-16:45**. Come along to have a chat with us. Contact [Beatrice Ashton-Lelliott](#) for meeting details.



[A Major EPSRC Grant will be led by Dr. Jun Zang to Contribute to Offshore Wind Energy.](#)

This newly funded EPSRC project ([SEA-SWALLOWS](#)) will be focussing on offshore wind, which is one of the most promising sources of clean energy; and central to the UK's ambitions to become carbon neutral. The price of offshore wind has fallen significantly over the past ten years. Part of this reduction has been due to improvements in technical understanding leading to less conservative designs. The UK is already the largest offshore wind energy world producer, and it aims to deliver one third of the country's total electricity by 2030.

Recently, there has been a trend to move to more exposed and deeper water locations with 'better' wind resources. However, such locations are susceptible to more extreme wave conditions and subsequently more severe loading. Breaking waves are known notoriously difficult to model numerically and to measure experimentally due to the violence of the hydrodynamics and scaling issues.

In this project, the PI [Dr. Jun Zang](#) from the Department of Architecture and Civil Engineering, will lead an interdisciplinary team from the Universities of Bath, Oxford, and Strathclyde with combined expertise in the areas of extreme sea-state analysis, violent wave interactions with coastal and offshore structures, state of the art numerical modelling, laboratory measurements, machine learning, and structural health



our EU funded project, where a new novel method for predicting complex nonlinear loads was found and reported in [Journal of Fluid Mechanics](#), in this project we aim to revolutionize load calculations on offshore structures using novel fluid mechanics. In collaboration with key industrial players in the field, we will develop a computationally fast method and an open source tool which can be used by engineers and researchers to compute extreme loading accurately and efficiently, leading to more efficient designs of offshore structures, reducing construction cost whilst preserving function and reliability.”

While the focus of this work will be on offshore wind, the ideas and tools & data generated will be more broadly applicable.



[Water Innovation Europe 2021 - EU Water-smart society for global leadership](#)

Last week, 14-18 June, Water Europe held its annual Water Innovation Europe (WIE) conference. Unfortunately, again fully online. Europe is with an average of 233 m³/inhabitant/year one of the largest water consumers in the world and 90% of our economy depends on water. Water quality and water quantity are key challenges, requiring answers from policies. In five plenary sessions and seven workshops the challenges and solutions were discussed.

The workshop on Hybrid Green and Grey Infrastructure showed different project utilizing nature-based solutions in different countries, ranging from storm water treatment, urban rainwater buffering and nutrient removal. Another workshop was addressing the water footprint of the Electric Vehicles Battery

actions are required to prevent slowing down the energy transition.

Back to back with the WIE 18 Working Group meetings were held. WIRC contributed actively to the Working Group “Water Security” and “Urban Water Pollution”. Both groups are preparing a White Paper with significant contributions from Bath: In Water Security Juliana Marcal (PhD student WISE CDT) and Jan Hofman are key contributors, whereas in Urban Water Pollutions significant contributions of Barbara Kasprzyk-Hordern and Jan Hofman can be found.

For more information see: [Water Innovation Europe](#), [Linkedin](#) or contact Jan Hofman

[GW4 Water Security Alliance and WIRC presenting at Climate Exp0](#)

On Tuesday 18th of May, the GW4 Water Security Alliance, including WIRC researchers hosted a 75-minute panel discussion on [‘Nature-based solutions’](#) at the Climate Exp0 conference.

The conference has been part in the run-up to the UN COP26 Climate Change Conference meeting in November 2021, organised by the COP26 Universities Network, a group of more than 55 UK-based universities working together to raise ambition for tangible outcomes of the UN COP26 and showcase UK and international research on aspects of climate change and climate mitigation.

The conference took place virtually between the 17th and 21st May 2021. Each day dedicated to one of five conference themes: Green Recovery; Nature-based Solutions; Mitigation Solutions; Adaptation and Resilience; and Finance. GW4 session Dr James Dyke, Assistant Director Global Systems Institute at the University of Exeter hosted a 75-minute panel [‘You’re surrounded! Regionally led, globally relevant, nature-based solutions of water’](#). The session featured research highlights that make use of the geographical resource of the GW4 alliance, including three presentations.

Prof Chris Clements, University of Bristol – ‘Ecological crystal balls: can we predict the future?’

Dr Jannis Wenk, University of Bath, WIRC – ‘Constructed wetlands for polishing municipal wastewater: Cromhall wetlands’

Prof Isabelle Durance, Cardiff University – Nature Based Solutions for Water Security

Dr Jane Khawaja, Interim GW4 Director, said: “It’s fantastic to see so many members of our GW4 Alliances and academics from across our four institutions engage with the COP26 Universities Network and this unique Climate Exp0 conference.”

Cromhall constructed wetland spring 2021 - Low-energy and nature-based solutions implemented at regional level such as constructed wetlands will play a vital role to reduce future greenhouse gas emissions by the water sector and lead to improved water quality.

‘Nature-based solutions can support human societies in multiple ways from providing food, clean water and shelter, to storing carbon and protecting us from the impacts of extreme events such as floods, droughts and heatwaves.’

Dr Jannis Wenk

Cromhall wetland



Recent publications

- [Architectural Engineering and Design Management](#), 'Editorial' Adeyeye, K & Codinhoto, R 2021
- [Hydroinformatics education – The Water Informatics in Science and Engineering \(WISE\) Centre for Doctoral Training](#)., *Hydrology and Earth System Sciences* Wagener , T, Savic, D, Butler, D, Ahmadian, R, Arnot, T, Dawes, J, Djordjevic, S, Falconer, R, Farmani, R, Ford, D, Hofman, J, Kapelan, Z, Pan, S & Woods, R 2021
- [Self-doped sulfonated polyaniline ultrafiltration membranes with enhanced chlorine resistance and antifouling properties](#)., *Journal of*

Upcoming conferences

[IWA Water in Industry 2021 - Conference - China, Nanjing, 23rd August - 25th August 2021](#)



The IWA conference “Water in Industry” is initiated to provide a knowledge sharing platform on new advances related to the water cycle in industry.

[Read more](#)

[AQUA~360 - Water for All: Emerging Issue and Innovations, United Kingdom Exeter, 31st August - 02nd September 2021](#)



Kala Vairavamoorthy, IWA Executive Director, has been announced as keynote speaker at Aqua~360, alongside other industry experts such as Peter Van der Hoek, chair of Drinking Water Engineering at TU Delft, and **Barbara Kasprzyk-Hordern**, Professor of Chemistry at the **University of Bath**.

[Read more](#)

[17th International Conference on Environmental Science and technology_\(Supported, Greece, Athens 1st September - 4th September 2021\)](#)



The 17th International Conference on Environmental Science and Technology (CEST2021). The conference is organised by the Global Network of Environmental Science and Technology jointly with the University of the Aegean (Greece) and the National and Kapodistrian University of Athens (Greece). CEST2021 is academically supported by the University of Salerno (Italy), the University of Cincinnati (USA) and the Imperial College London (UK) as well as a group of

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Let us know if you are aware of any new colleagues or students working within water research at the University of Bath, so that we can add them to our mailing lists!



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